

Remarks

Claims 1 – 11, 19 – 20 and 26 are pending. By means of the present amendment, claims 19 and 20 are cancelled. Claims 1 – 6, 10, 11 and 26 are currently amended. Claims 7 – 9 remain as previously presented. New claims 27 – 35 are added.

The discussion of the rejections set forth below applies equally to claims 1 – 11 and 26 as filed and to these claims as amended. The filed and amended claims are all believed to be patentable over the cited references for the reasons discussed below.

In the Final Office Action, claims 1 – 11 and 26 were rejected as obvious over the combination of Foster, et al. and Paul et al. This rejection is respectfully traversed. In the Final Office Action, it is stated that the Foster, et al patent teaches “a receiver to received information from an implantable medical device(IMD) (abstract)...” This observation is respectfully traversed. The Abstract of Foster, et al refers only to the cardiac assist device, i.e., the IMD. No mention is made of a receiver for signals from the IMD. While it is understood generally that programmers exist to receive information from IMD's, there is no hint in the Abstract as cited that the transmitted information should somehow influence the delivery of MRI scans.

The Office Action further states that the Foster, et al reference teaches “a control unit to coordinate the application of the electromagnetic radiation bursts based on the information (see Figure 5)”. This observation is also respectfully traversed. Figure 5 shows the response of the IMD to optical signals received from the MRI unit by the IMD . There is no disclosure of the MRI unit coordinating its activities based on signals transmitted from the IMD.

The Office Action then states that the Foster, et al. reference teaches “the information defines a timing of stimulation pulses applied to the patient by the IMD (col.7, lines 5 – 67). This observation is also respectfully traversed. The cited language describes communication within the IMD between the portion that stays operational during the MRI procedure and the portion that shuts down. The information transmitted between the modules only relates to turning on the modules on and off. There is no disclosure that even the fact of the activation or deactivation of the modules is ever telemetered to an external device. Further, during the MRI procedure, in this embodiment of the Foster, et al device, the portion of the device that is capable of telemetering information to an external device is disabled. The portion of the circuitry of this embodiment of the Foster, et al. invention that stays active during the MRI procedure runs completely asynchronous to the MRI device, simply generating pacing pulses asynchronously until an internal half hour timer expires. Similarly, the portion of the circuitry of the pacemaker that senses cardiac events is disabled during the MRI. There is no teaching in the Foster, et al reference that any information as to the timing of the IMD during MRI procedures is transmitted from the IMD under any circumstances. There is no possible way to synchronize delivery of MRI radiation to sensed or paced events during MRI procedures.

The observations discussed above are fundamental to the rejection of claims 1 – 11 and 26. Because the rejection of the claims depends upon these observations, it is respectfully asserted that the rejection of claims 1 – 11 and 26 is unsupported and that it should be withdrawn.

Claims 2, 3, 7 and 11 were all also rejected over Foster, et al. This rejection is expressly based on the premise that Foster, et al. teaches all of claim 1 except for the limitations of claims, 2, 7 and 11. However, as discussed previously, this is not believed to be the case. As such, it is respectfully asserted that the rejection of claims 2, 3, 7 and 11 is unsupported and that this rejection should also be withdrawn.

Claims 1 – 6 and 26 have been amended to correct the deficiencies noted under section 112 and are now believed unobjectionable. No new substantive limitations were added to the amended claims other than the substitution of “heart” for “myocardial” (supported in PP 022) and the clarification that the MRI radiation is applied at common time points during the cardiac rhythm (supported in PP 006 and PP 022). No new matter is added to the claims as a result of the amendments.

New claims 27 – 35 have been added and are apparatus claims paralleling the method claims 2 – 11 as discussed above. These added claims are believed supported by the specification and patentable over the cited references for the same reasons as the method claims discussed above.

Conclusion

Entry of the present amendment, reconsideration of the rejections of claims 1 – 11 and 26, as filed and as amended, along with consideration of newly submitted claims 26 – 35 is respectfully requested. The Examiner is invited to contact the undersigned with any questions regarding this application.

Respectfully submitted,

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/Reed A. Duthler/
Reed A. Duthler
Reg. No. 30,626
Telephone: (763) 526-1564
Customer No. 27581